Live Line Technology

Arc Flash suits

Available from : sales@liveline.co.za

Tel : +2718 468 5080

LLT ARC Flash suits from : ATPV 12 CAL – 140 CAL

Live Line Technology Arc flash suits provide full body protection.

LLT Arc Save Flash suit consists of the following products – ARC Flash Hood, ARC Flash Jacket, ARC Trousers, ARC Flash gloves and protective boots. The ARC Flash categories range from as 12 CAL to 140 CAL, and a wide variety of clothing ranges such as ARC Flash undergarments, ARC flash casual wear.

LLT ARC - ATPV 55 CAL/cm² Jacket

LLT - ATPV 55 CAL/cm² Hood

LLT ARC Trousers- ATPV 55 CAL/cm²

LLT ATPV 55 CAL/cm² Gloves

Du Pont Protera - Triple Layered system

Arc flash Inherently flame retardant - (not treated material)

33%, Nomex/ Kevlar 65%, Modacruylic , 2% and Antistatic liners

Our garments vary in colours from Orange, Brown , Olive , Royal blue & Navy blue.

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Function of Du Pont Nomex LLT Arc Save flash suits :

The protection provided from Nomex Arc Flash suites gives a person the benefit of a few seconds to escape the Arc flash, by preventing the burning of skin. The main characteristic of Nomex material is to self extinguish. (FR – Inherently flame retardant – not treated).

DuPont™ Nomex® fibre is inherently flame-resistant, will not melt or drip, and does not support combustion in the air, thus providing excellent arc flash protection. And because the protection is woven right into Nomex® garments, it cannot wear off of wash out over time.

When exposed to the intense heat typical of electric arc, Nomex® fibre carbonises and thickens. This increases the protective barrier between the heat source and the wearer's skin and helps minimise burn injury.

Nomex Arc flash suites should always be worn when operating high voltage systems for example 11kv, 22kv or 33kv systems in applications such as switchgear inside Substations. (eg. 132kv/11kv) This is to protect against the potential hazard of an arc flash.

The correct arc flash risk assessment needs to be carried out before an ATPV – Arc Thermal Performance value can be determined. The greater the ATPV value.

Sizes :

Small – 5XL (prices do vary according to size).

Colour range : Olive, Black , Navy blue , Orange

Fabric: Blended 33% Nomex/Kevlar, 66% Modacruylic &
2% Antistatic liners. TRIPLE LAYER

ATPV[1] range : from 12 cal/cm to 140 cal/cm²

Specification : ASTM F1959/ 1959M ASTM F1506; NFPA 70E;
SANS 724.

Features :

- Light weight.
- Material: Multi-layer DuPont™ Nomex® / DuPont™ Kevlar® / Modacrylic
- Guaranteed flame resistant for the life of the garment.
- Machine washable.
- Excellent breathability.
- Cool cotton comfort.
- Arc Flash Jacket designed to interface with Arc Flash Hood.

LLT Save Arc flash ratings :

An electrical arc flash is more severe with higher voltages & higher fault level ratings of the equipment (switchgear) substation. The greater the flash, the greater the severity of the radiation exposed to the operator. It is imperative to get the correct grading of the Nomex Flash suite to ensure the necessary protection against radiation of the Arc flash.

LLT Save Arc Thermal Performance values (ATPV) :

- **12+ CAL. (Conti)**
- **16 - 20+ CAL (Conti)**
- **25+ CAL.**
- **55+ CAL Arc & Oil**
- **74+ CAL.**
- **100 + CAL.**
- **140 + CAL.**

Arc Thermal Performance value (ATPV value) is presented in calories per centimeter square and represents the maximum capability possible from an arc flash protection for particular clothing.

Characteristics of Arc fabric :

• The fiber itself absorbs heat energy during the carbonization process.

• The fibers eliminate air movement and heat transfer to the interior skin area.

• An insulating barrier reduces heat transfer to the person.

ARC Flash clothing categories: NFPA 70 E standard code

There are 4 categories into which ARC Flash clothing are divided into:

Hazard Category	Clothing description	ATPV Value
Category HRC 0	Non-melting, flammable materials(untreated cotton, wool, rayon, silk or blends. A fabric with 4.5 ounces	**No ATPV value**
Category HRC 1	FR shirts and FR pants or FR coveralls, 4 CAL/cm2.	**4 – 8 Cal/cm²**
Category HRC 2	Cotton underwer, conventionsl shirts, trouser, plus FR shirts, FR trouser or FR coveralls	**8 – 25 Cal/cm²**
Category HRC 3	Cotton underwear, plus FR shirt, FR trouser and FR coveralls.	**25 – 40 Cal/cm²**
Category HRC 4	Cotton underwear, plus FR shirt, FR trouser and multi-layered Flash suit	**40 < Cal/cm²**

Category HRC 2 - High visibility reflective braces ATPV 12 CAL/cm²

Application :

Reflective braces are worn in an around moving vehicles at construction sites to indicate the presence of the electrician. This could be in and around new electrical installations, such as panels , kiosks , or any electrical construction site.

In the electrical industry these reflective braces are required to be AR (Arc rated) in event of an arc flash.

Specifications: ASTM 1959F/1959M, IEC 61482, SANS 724, ASTM 1506, NFPA 70E

Garment Fabric : Du Pont, Nomex

ATPV[1] range : from 12 cal/cm2

HAF[2] : 80.2%

Category HRC 2 - High visibility Orange helmet with light ATPV 12CAL/cm2

Electrician helmet ATPV 12 CAL
Arc faceshield and helmet to be used in association with dielectric head protection in and around electrical panels for the protection form the hazards of arc flashes.

Material : Light weight
Visor Light enhanced green tint. Arc rated visor ATPV 12 CAL/cm2.

Features :
Anti-fog
Large viewing 7.5" x 20" viewing areas.
Adjustable pivot design
Ventilated.
Hat included.

Specification :
ASTM F2178 , NFPA 70E-2004
Arc rating ATPV 12 ca/cm2

Size – One size fits all

Category HRC 2 - ARC Flash suit kits - High visibility Conti suits ATPV 12 , ATPV 16 & ATPV 21 CAL/cm²

Coverall (one piece)

Conti suit (2 piece)

Application :
ARC rated high visibility suits. Applied where vision is impaired,. In the electrical industry the need may arise were high visibility garment are required due to adverse weather or poor visibility in the working environment.

Description:

HRC 2, ATPV 12 , 16, 20
2 Piece Orange Jacket with zipper and 2 breast pockets. Standard button down collar and adjustable cuffs with button closure. New "Easy fit" design for comfort fit and fashionable appearance.

Specifications : OSHA 1910.269, ASTM F1506-10A, NFPA 70E-2015, CSA Z462-15

Garment fabric: Ultrasoft.

ATPV[1] available range : from 12.4 cal/m² - 20 cal/m²

Heat Attention Factor : **80.2%**

Category HRC 2 - High Visibility 1000v Electricians Helmets (all colours)

All colours available

Application : Electricians working in and around electrical panels require 1000v rated helmets , and these are available in various colours to be fitted with an ATPV 12.4 CAL/cm2 visor.

Helmets are rated to 1000v

Helmets available in any colour.

Material : Plastic/ Chemical Alloy.

Specification:
Fabric: NFPA 70[E]-2004 , ASTM F2178

ATPV[1] : 18.3 CAL/cm2

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 2 - ARC Flash suit kits - Conti suits

ATPV 12 , ATPV 16 & ATPV 21 CAL/cm² (2 Pc Conti suit)

2 Piece Conti suit

ATPV 12 , ATPV 16 , ATPV 21

Application :
ARC rated Conti suits for everyday electricians use. HRC Hazard Risk category 2. In the electrical industry the situation may arise and electricians need to be protected against the harmful effects of an arc flash.

Description: 2 Piece Conti suit HRC 2

HRC 2, ATPV 12 , 16, 21
2 Piece Navy Jacket with zipper and 2 breast pockets. Standard button down collar and adjustable cuffs with button closure. New "Easy fit" design for comfort fit and fashionable appearance.

Garment Fabric: Triple layer DuPont™ Nomex® / DuPont™ Kevlar®

Specifications : ASTM F1959/ 1959M
ASTM F1506; NFPA 70E; SANS 724

ATPV[1] available range : from 12.4 cal/m² , 16 & 21 cal/m²

Coverall version also available (1 piece)

Description: HRC 2 1 Pc Arc rated Coverall

HRC 2, ATPV 12 , 16, 21
2 Piece Navy Jacket with zipper and 2 breast pockets. Standard button down collar and adjustable cuffs with button closure. New "Easy fit" design for comfort fit and fashionable appearance.

Standard:
Fabric: Triple layer DuPont™ Nomex® / DuPont™ Kevlar®

Category HRC 2 - ARC Flash suit kits - Casual wear ATPV 12 CAL/cm²

Application :
Casual wear for everyday work. Electricians working in and around low voltage panels, distribution boards and maintenance of general electrical installations.

Description:

ARC Flash clothing Shirt, Khaki (Blue available) HRC 2, ATPV 12.4cal/cm²
Long sleeve work wear shirt with buttons and 2 breast pockets. Standard button down collar and adjustable cuffs with button closure. New "Easy fit" design for comfort fit and fashionable appearance.

Specifications : ASTM F1959/ 1959M
ASTM F1506; NFPA 70E; SANS 724

Garment Fabric: Brand Du Pont , 33% Nomex/Kevlar 65% Modacrylic 2% Antistatic . Triple layered.

ATPV[1] : 12.4 cal/m²

Description:
Jean trousers, HRC 2, ATPV 12.3cal/cm²
Denim jean trousers with zip and two back pockets. Regular design for comfort fit**.** Ladies design available on special request.

Specifications : ASTM F1959/ 1959M
ASTM F1506; NFPA 70E; SANS 724

Garment Fabric: Brand Du Pont , 33% Nomex/Kevlar 65% Modacrylic 2% Antistatic. Triple layered.

ATPV[1] : 12.4 cal/m²

Category HRC 2 - ARC Flash suit kits - Long coat ATPV 12 & 20 CAL/cm²

ATPV 12 - 20 CAL cm2 fall into category HRC 2 arc flash protection.

The user must perform a Hazard Risk Assessment to determine the level of exposure and need. This task can be accomplished with the proper training and software. Professional assistance is available on request.

Applications with lower voltages and lower fault levels have lower energy levels. Electricians working on distribution boards in various factories , mining and industries with lower voltage applications are not free from arc flash occurrences. Although lower voltages are less likely to jump across phases , when these do occur the arc flash can be just as harmful when the conditions allow. Arc flash occurrences are a factor of the distance between the phases and from the source (transformer) , the circuit breakers trip time, the available short circuit current, dirt buildup in the equipment which may affect the conductive path, moisture (humidity), circuit supply voltage, amount of motor contribution during a fault, indoor versus outdoor applications and the distance of the user from the switchgear.

Specifications : OSHA 1910.269, ASTM F1506-10A, NFPA 70E-2015, CSA Z462-15

Garment fabric: Ultrasoft 9 Oz. (Imported)

ARC Flash clothing HRC 2, ATPV 12 & 21 cal/cm². Long sleeve dust coast. 2 breast pockets with buttons. New “Easy fit” design for comfort fit and fashionable appearance.

Category HRC 2 - Visor and helmet - ATPV 12 CAL/cm² & 21 CAL/cm²

Application : Electricians working in and around electrical panels with a HRC 2 rating are required to wear an ATPV 12 CAL Helmet and visor.

Material: Plastic helmet (insulated) Chemical alloy.

Specification :
Product material : NFPA 70^{-2004} ASTM F2178
ATPV[1] : 12.4 cal/m² & ATPV 18 CAL/cm²
HAF[2] : 85.4%

Category HRC 2 - ARC Flash suit kits - Rain suits ATPV 19 CAL/cm²

Purpose :

To provide thermal protection by ARC (Arc rated) and FR (Fire retardant) material.

The rating is ATPV 19 CAL/cm²

Specification :

NFPA 70E, ASTM F1506, EN 531, OSHA 1910.269

Application :
The electrical industry in and around wet weather. It is never advisable to work in and around water when working with electricity. However should the need arise where a worker is working adverse weather the appropriate ARC Flash rainsuits should be provided.

Description:
Rain suit designed to be an electric arc resistant, waterproof protective ensemble, consisting of jacket with hood and bib trousers.
HRC2, ATPV 19 CAL/cm2

Jacket:
Flourescent Orange PU/FR Cotton knit. 100% Waterproof with welded seams Covered zip closure with snap storm flap. 2 Front pockets with flap. Back Ventilation system with d-ring opening.

Trousers: Bib style trouser with quick release suspender system, fly front with snap, Velcro® tab type leg cuff adjusters, 3M 40mm reflective trim around calves and knees

Material:
Fabric: Nomex®
Moisture barrier: FR synthetic leather PU/PVC
Weight: 265g/m²
Hydrostatic resistance: >80psi
100% non-conductive materials

Electrical industry:

Arc Flash Clothing protects from thermal effects of arc flash only.
This product must form part of an appropriate set of PPE to protect against the hazards of arc flash.

ATPV: Arc Thermal Performance Value.
The higher the value, the more insulated one is from second degree burn.
HAF : Heat Attenuation Factor.
The higher the HAF% the more heat is blocked by the fabric**.**

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 2 - ARC Flash suit kits - Rain suits ATPV 24 CAL/cm²

Purpose :

To provide thermal protection by AR (Arc rated) and FR (Fire retardant) material.

The rating is ATPV 24 CAL/cm

Specification:

NFPA 70E, ASTM F1891 , OSHA 1910.269

Part number : LLT-RS24CAL

Application :
The electrical industry in and around wet weather. It is never advisable to work in and around water when working with electricity. However should the need arise where a worker is working adverse weather the appropriate ARC Flash rainsuits should be provided.

Description:
Rain suit designed to be an electric arc resistant, waterproof protective ensemble, consisting of jacket with hood and bib trousers.
HRC2, ATPV 24 CAL/cm2

Jacket:
Flourescent Orange PU/FR Cotton knit. 100% Waterproof with welded seams Covered zip closure with snap storm flap. 2 Front pockets with flap. Back Ventilation system with d-ring opening.

Trousers: Bib style trouser with quick release suspender system, fly front with snap, Velcro® tab type leg cuff adjusters, 3M 40mm reflective trim around calves and knees

Material:
Fabric: Nomex®
Moisture barrier: FR synthetic leather PU/PVC
Weight: 265g/m²
Hydrostatic resistance: >80psi
100% non-conductive materials

Specification : ASTM F1891 , ASTM D2413

Electrical industry:

Arc Flash Clothing protects from thermal effects of arc flash only.
This product must form part of an appropriate set of PPE to protect against the hazards ofarc flash.

ATPV: Arc Thermal Performance Value.
The higher the value, the more insulated one is from second degree burn.
HAF : Heat Attenuation Factor.
The higher the HAF% the more heat is blocked by the fabric**.**

Category HRC 1 - ARC Flash suit kits - ATPV 12 CAL/cm ²

ARC Flash clothing

The user must perform a Hazard Risk Assessment to determine the level of exposure and need. This task can be accomplished with the proper training and software. Professional assistance is available on request.

Arc flashes occur when electricity jumps across the phases and cause a short circuit and subsequent flash. Arc flash occurrences are a factor of the distance between the phases and distance from the source (transformer) , the circuit breakers trip time, the available short circuit current, dirt buildup in the equipment which may affect the conductive path, moisture (humidity), circuit supply voltage, amount of motor contribution during a fault, indoor versus outdoor applications and the distance of the operator from the switchgear.

To provide adequate protection, the electrician should be protected from head to toe. The 12 ATPV CAL headkit has a tinted visor that protects from thermal effects, conductor shrapnel and blinding light generated from the arc. ATPV 12 CAL Jackets and trousers are available in both two piece and one piece. ATPV 12 CAL Gloves are designed to provide maximum dexterity so that the electrician's work is not inhibited. 1000v boots provide the insulation for live work conditions and a bag holds all the equipment together.

Components of the ATPV 12 CAL ARC Flash suit

1) ATPV 12 CAL Jacket & Pants
(2 Piece Conti suit/ overall.)

2) ATPV 12 CAL gloves
Powerflex by Ansell

3) ATPV 12 CAL
Headkit

4) ATPV 12 CAL
Kitbag

Material
Brand Du Pont ,
33% Nomex/Kevlar
65% Modacrylic
2% Antistatic
Triple layered.

5) 1000v Insulated Electrician boots

6) ATPV 12 CAL
Headkit (optional)

HRC 1 , is the clothing required for low hazard risk category environments. The necessary risk assessment needs to be carried out to ascertain the correct arc thermal performance rating clothing which is required. The ATPV 12 CAL kit comes with a kit bag and includes the following pieces.

ATPV 12 CAL (Kit comprises of the following items : (individual items can also be sold separately) :

1) ATPV 12 CAL Jacket.
2) ATPV 12 CAL Trousers. Or ATPV 12 CAL Coverall.
3) ATPV 12 CAL (gloves)
4) ATPV 12 CAL (Headkit)
5) Insulated boots (1000v)
6) Kit bag

Safety switching equipment (kit) for ATPV 12 – 20 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage.

That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats > 1000v
Specification : IEC 61111:2009

3) High voltage detector 1000V
Specification : IEC61243-1

4) Insulated rubber platforms < 45kv
Specification : NBN761.01 (ENEL)

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
De-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 2 - ARC Flash suit kits - Conti suits
ATPV 12 CAL/cm² - ATVPV 20 12 CAL/cm²

Application :

ATPV 12, 16 & 20 CAL/cm2 fall into category HRC 2 arc flash protection.

The user must perform a Hazard Risk Assessment to determine the level of exposure and need. This task can be accomplished with the proper training and software. Professional assistance is available on request.

Arc flashes occur when electricity jumps across the phases and cause a short circuit and subsequent flash. Arc flash occurrences are a factor of the distance between the phases and distance from the source (transformer) , the circuit breakers trip time, the available short circuit current, dirt buildup in the equipment which may affect the conductive path, moisture (humidity), circuit supply voltage, amount of motor contribution during a fault, indoor versus outdoor applications and the distance of the operator from the switchgear.

To provide adequate protection, the electrician should be protected from head to toe. The ATPV 21 CAL headkit has a tinted visor that protects from thermal effects, conductor shrapnel and blinding light generated from the arc. ATPV 25 CAL Jackets and trousers are available in only two piece. ATPV 21 CAL Gloves are designed to provide maximum dexterity so that the electrician's work is not inhibited. 20000v boots provide the insulation for live work conditions and a bag holds all the equipment together .

Components of the ATPV 12, 16 & 20 CAL ARC Flash suit

1) Jacket & Trouser ATPV 20
2 Piece Conti suit

2) ATPV 20 CAL (Gloves)

3) ATPV 18 CAL (Hood)

4) 1000v Insulated Electrician boots

5) Arc Kitbag

Specifications :
ASTM F1959/ 1959M
ASTM F1506; NFPA 70E; SANS 724

Garment Composition :
Brand Du Pont , Nomex

ATPV[1] : 20 cal/m²

Safety switching equipment (kit) for ATPV 12 – 20 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage.

That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats > 1000v
Specification : IEC 61111:2009

3) High voltage detector 1000V
Specification : IEC61243-1

4) Insulated rubber platforms < 45kv
Specification : NBN761.01 (ENEL)

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
De-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 3 - ARC Flash suit kits - ATPV 25 CAL/cm ²

ATPV 25 CAL/cm2 fall into category HRC 4 arc flash protection. The user must perform a Hazard Risk Assessment to determine the level of exposure and need. This task can be accomplished with the proper training and software. Professional assistance is available on request.

The electrician should be protected from head to toe. The ATPV 25 CAL Headkit has a tinted visor that protects from thermal effects, conductor shrapnel and blinding light generated from the arc. ATPV 25 CAL Jackets and trousers are available in two piece. ATPV 25 CAL Gloves are designed to provide maximum dexterity so that the electrician's work is not inhibited. Should be worn with rubber insulated gloves & 20000v boots provide the insulation for live work conditions and a bag holds all the equipment together.

Components of the ATPV 25 CAL ARC Flash suit

Specification :
SANS 724
ASTM 1506
ASTM F1959 /F 1959M
OSHA 1910.269

Garment Fabric :
Brand Du Pont ,
33% Nomex/Kevlar
65% Modacrylic
2% Antistatic
Triple layered.

ATPV 25 CAL (Jacket)

ATPV 25 CAL
(Ventilated Hood also an option)

ATPV 25 CAL gloves

ATPV 25 CAL (Trouser)

ATPV 25 CAL
Kit bag

Material - Inherently flame retardant Protera material.

Safety switching equipment (kit) for ATPV 25 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage. That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats > 1000v
Specification : IEC 61111:2009

3) High voltage detector 1000V
Specification : IEC61243-1

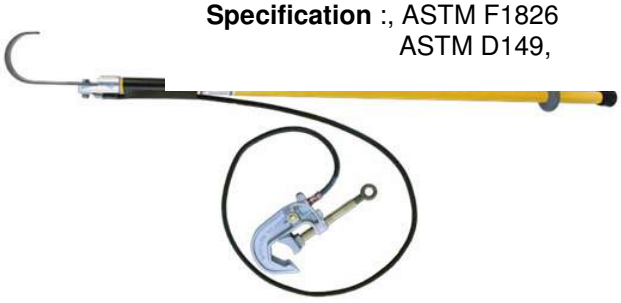
4) Insulated rubber platforms < 45kv
Specification : NBN761.01 (ENEL)

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
De-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,



Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 4 - Arc & Oil protection - ATPV 55 CAL/cm ²

ATPV 55 CAL/cm2 fall into category HRC 4 arc flash protection.

The user must perform a Hazard Risk Assessment to determine the level of exposure and need. This task can be accomplished with the proper training and software. Professional assistance is available on request.

When working in and around oil switchgear the need often arises that the electrician carrying out maintenance or other work needs to have the necessary thermal protection and protection from oil heated inside of switchgear.

Features of the ATPV 55 Arc & Oil : Du Pont material (not treated Cotton)

Multi-layered **Protera fabric construction**. ATPV 55 CAL with an added filament to prevent oil penetration.
Arc rated at 55 cal/cm² (without the additional propriety thermal insulation).
Inherently flame retardant material.
Protects from hot or burning oil inside of switchgear and transformers.
Garment is sealed from oil and any chemicals in FR fabric.
Fits snugly over shoulders and head.
Available in Jacket, Trouser, Hood, Glove and a bag to carry. SANS 724 approved material.
Nomex cuffing
Nomex thread
High front for maximum body protection.

Specifications :
ASTM F1959/ 1959M
ASTM F1506; NFPA
70E; SANS 724
OSHA 1910.269

Material
Brand Du Pont ,
33% Nomex/Kevlar
65% Modacrylic
2% Antistatic
Triple layered.

ATPV[1] : 55 cal/m²

ATPV 55 CAL (Jacket)

ATPV 55 CAL
(Ventilated Hood also an option)

ATPV 55 CAL gloves

ATPV 55 CAL (Trouser)

ATPV 55 CAL
Kit bag

Material - Inherently flame retardant Protera material.

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Safety switching equipment (kit) for ATPV 55 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage.

That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats > 1000v
Specification : IEC 61111:2009

3) High voltage detector 1000V
Specification : IEC61243-1

4) Insulated rubber platforms < 45kv
Specification : NBN761.01 (ENEL)

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
de-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 4 - ARC Flash suit kits - ATPV 55 CAL/cm ²

ATPV 55 CAL/cm2 fall into category HRC 4 arc flash protection. The user must perform a Hazard Risk Assessment to determine the level of exposure and need. This task can be accomplished with the proper training and software. Professional assistance is available on request.

The electrician should be protected from head to toe. The ATPV 55 CAL Headkit has a tinted visor that protects from thermal effects, conductor shrapnel and blinding light generated from the arc. ATPV 55 CAL Jackets and trousers are available in two piece. ATPV 55 CAL Gloves are designed to provide maximum dexterity so that the electrician's work is not inhibited. Should be worn with rubber insulated gloves & 20000v boots provide the insulation for live work conditions and a bag holds all the equipment together.

Components of the ATPV 55 CAL ARC Flash suit

Specification :
SANS 724
ASTM 1506
ASTM F1959 /F 1959M
OSHA 1910.269

Garment Fabric :
Brand Du Pont ,
33% Nomex/Kevlar
65% Modacrylic
2% Antistatic
Triple layered.

ATPV 55 CAL (Jacket)

ATPV 55 CAL
(Ventilated Hood also an option)

ATPV 55 CAL gloves

ATPV 55 CAL (Trouser)

ATPV 55 CAL
Kit bag

Material - Inherently flame retardant Protera material.

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Safety switching equipment (kit) for ATPV 55 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage. That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats > 1000v
Specification : IEC 61111:2009

3) High voltage detector 1000V
Specification : IEC61243-1

4) Insulated rubber platforms < 45kv
Specification : NBN761.01 (ENEL)

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
De-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 4 - ARC Flash suit kits - ATPV 65 CAL/cm ²

LLT ARC65 Suit – Hazard Risk Category 4 (HRC4) (70 cal/cm² ATPV) 15.5 oz. Inherently FR Aramid Fabric, Tan

The **Coat & Bib-Overall** style kit includes choice of size Coat & Bib-overall & Arc flash Hood with Hard Cap.

The ARC65 Arc Flash Suit designed to provide protection from arc flash heat exposures. The suit exceeds the requirements of NFPA 70E Hazard Risk Category 4* (HRC4*), up to 70 cal/cm². The materials used are manufactured with 56% Para-Aramid, 24% Meta-Aramid and 20% Melamine fiber.

Oberon's ARC65 suit is inherently Flame Resistant (FR). It will remain Flame Resistant after years of frequent and repeated laundering. ARC65 is the lightest weight arc flash suit in the market at this protection level. The outer surface of the shield window is scratch resistant coated to last longer. The inner surface of the shield is Anti-fog coated for clearer visibility. The Coat & Bib-Overall Suit protect from Arc flash heat exposure and are constructed of materials that are inherently Flame Resistant.

Features :

- 15.5 oz/yd² fabric has an Arc Rating of 70 cal/cm² ATPV.
- Hazard Risk Category 4.
- Nomex® sleeve cuffs.
- Double front closure has flame-resistant zipper tape and a Nomex Velcro® safety flap.
- Sewn with flame-resistant thread
- Hood Arc Rating (ATPV): 70 cal/cm²
- Lens-Visible Light Transmittal: 42%
- Meets NFPA 70E-2009 and ASTM F-1506-02ae1.
- Note: Personal protective equipment should be chosen to meet or exceed the expected incident energy at a specific work site.

ATPV 65 CAL (Gloves)

ATPV 65 CAL (Hood)

ATPV 65 CAL (Bag)

ATPV 65 CAL (Jacket & Trouser

Specifications :
NFPA 70E
ASTM F1506-02a.
OSHA 1910.269

Garment composition:
56% Para-Aramid
24% Meta-Aramid
20% Melamine fiber

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Safety switching equipment (kit) for ATPV 65 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage.

That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats > 1000v
Specification : IEC 61111:2009

3) High voltage detector 1000V
Specification : IEC61243-1

4) Insulated rubber platforms < 45kv
Specification : NBN761.01 (ENEL)

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
De-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 4 - ARC Flash suit kits - ATPV 74 CAL/cm ²

ATPV 74 CAL/cm2 fall into category HRC 4 arc flash protection. The user must perform a Hazard Risk Assessment to determine the level of exposure and need. This task can be accomplished with the proper training and software. Professional assistance is available on request.

The electrician should be protected from head to toe. The ATPV 74 CAL Headkit has a tinted visor that protects from thermal effects, conductor shrapnel and blinding light generated from the arc. ATPV 74 CAL Jackets and trousers are available in two piece. ATPV 74 CAL Gloves are designed to provide maximum dexterity so that the electrician's work is not inhibited. Should be worn with rubber insulated gloves & 20000v boots provide the insulation for live work conditions and a bag holds all the equipment together.

Components of the ATPV 74 CAL ARC Flash suit

Specification :
ASTM 1506-98
NFPA 70E.
OSHA 1910.269

Garment Fabric :
Norfab
Para-Aramid, OPF
Novoloid (Phenolic) fibers

ATPV 74 CAL Glove

ATPV 74 CAL
Jacket & Trouser

ATPV 74 CAL
(Hood – Ventilated option available)

ATPV 74
Carry Bag

ATPV 74 CAL kit consists of : **Arc Rating:** (ATPV 74) **Hazard Risk Category:** IV
74 Cal Arc Flash Jacket
74 Cal Arc Flash Bib-Overalls
74Cal Arc Flash Hood (Optional Fresh Air Fan Unit)
74 Cal Arc Glove.

Inner Quilt Liner: Norfab high performance thermal liner constructed of two fabric layers (OMNI Quilt™ Synergy) quilted in a 3 inch diamond pattern with natural Nomex® thread. The first layer is a blue dyed woven Nomex® fabric.
Outer Fabric: Norfab woven 5 oz/yd2 "light weight" dimensionally stable novel fabric composed of an optimal blend of Para-Aramid, OPF, and Novoloid (Phenolic) fibers.
Excellent for Electric Arc
Splash Protective garments
TenCate Tuffweld® provides rugged, inherently flame- resistant protection at the lowest cost per wear of competitive welding garment fabrics. It surpasses FR treated cotton in tensile strength, tear strength, abrasion resistance and moisture wicking. It also has a higher resistance to pin holes and never needs ironing. TenCate high performance fabrics provide protection, comfort, durability and excellent value.

Safety switching equipment (kit) for ATPV 74 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage.

That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats > 1000v
Specification : IEC 61111:2009

3) High voltage detector 1000V
Specification : IEC61243-1

4) Insulated rubber platforms < 45kv
Specification : NBN761.01 (ENEL)

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
De-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 4 - ARC Flash suit kits - ATPV 100 CAL/cm ²

ATPV 100 CAL/cm2 fall into category HRC 4 arc flash protection. The user must perform a Hazard Risk Assessment to determine the level of exposure and need. This task can be accomplished with the proper training and software. Professional assistance is available on request.

Medium voltage applications with significant electrical energy levels. Multi-layered Protera. Arc flashes occur when electricity jumps across the phases and cause a short circuit and subsequent flash. Arc flash occurrences are a factor of the distance between the phases and distance from the source (transformer) , the circuit breakers trip time, the available short circuit current, dirt buildup in the equipment which may affect the conductive path, moisture (humidity), circuit supply voltage, amount of motor contribution during a fault, indoor versus outdoor applications and the distance of the operator from the switchgear.

Electricians working on distribution boards in various substations, factories and mines switchgear with medium voltage applications are at risk from arc flash occurrences. Medium voltages have the necessary potential to jump across phases, when these do occur the arc flash can be just as severe and harmful a higher voltages when the conditions allow.

To provide adequate protection, the electrician should be protected from head to toe. The ATPV 55 CAL headkit has a tinted visor that protects from thermal effects, conductor shrapnel and blinding light generated from the arc.

Components of the ATPV 100 CAL ARC Flash suit

Specification :
SANS 724
ASTM 1506
ASTM F1959 /F 1959M
OSHA 1910.269

Garment Fabric :
Brand Du Pont ,
33% Nomex/Kevlar
65% Modacrylic
2% Antistatic
Triple layered.

ATPV 100 CAL (Jacket)

ATPV 100 CAL
(Ventilated Hood also an option)

ATPV 100 CAL gloves

ATPV 55 CAL (Trouser)

ATPV 100 CAL
Kit bag

Material - Inherently flame retardant
Protera material.

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Safety switching equipment (kit) for ATPV 100 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage.

That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats > 1000v
Specification : IEC 61111:2009

3) High voltage detector 36KV
Specification : IEC61243-1

4) Insulated rubber platforms < 45kv
Specification : NBN761.01 (ENEL)

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
De-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 4 - ARC Flash suit kits - ATPV 100 CAL/cm ²

ATPV 100 CAL/cm2 fall into category HRC 4 arc flash protection.

The user must perform a Hazard Risk Assessment to determine the level of exposure and need. This task can be accomplished with the proper training and software. Professional assistance is available on request.

ATPV 100 CAL/cm2 ARC Flashsuits are used in high energy applications, where higher voltages occur with higher fault levels are experienced. The 100 CAL suit provides greater protection from the heat generated electrical ARC's generated from.

ATPV 100 CAL kit consists of : **Arc Rating:** (ATPV 100) **Hazard Risk Category:** IV
100 Cal Arc Flash Jacket
100 Cal Arc Flash Bib-Overalls
100 Cal Arc Flash Hood (Optional Fresh Air Fan Unit)
100 Cal Arc Glove.
Shell: Tencate 10.3 oz/yd2 Tuffweld 1000 (350 Twill g/m2)
Fiber Blend: 60% FR Rayon, 40% Para-Aramid
Liner: 16 **oz Aramid Blend Thermal Liner**
Color: Brown, Natural

- **TenCate Tuffweld®** provides rugged, inherently flame- resistant protection at the lowest cost per wear of competitive welding garment fabrics. It surpasses FR treated cotton in tensile strength, tear strength, abrasion resistance and moisture wicking. It also has a higher resistance to pin holes and never needs ironing. TenCate high performance fabrics provide protection, comfort, durability and excellent value.

Specifications :
NFPA 70E
ASTM F1506-02a.
OSHA 1910.269

Garment composition :

Shell: Tencate 10.3 oz/yd2 Tuffweld 1000 (350 Twill g/m2)
Fiber Blend: 60% FR Rayon, 40% Para-Aramid

Liner: 16 oz Aramid Blend Thermal Liner

1 & 2) ATPV 100 CAL/cm (Jacket & Trousers)

3) ATPV 100 CAL Glove

5) ATPV 100 CAL Kitbag

2) ATPV 100 CAL/cm gloves

(Ventilated Hood option)

A ventilated hood operates from a rechargeable battery pack. The ventilated hood provides a cooling option for the heavier suits which are hotter units.

Safety switching equipment (kit) for ATPV 100 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage.

That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats < 36kV
Specification : IEC 61111:2009

3) High voltage detector <36Kv
Specification : IEC61243-1

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
De-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Category HRC 4 - ARC Flash suit kits - ATPV 140 CAL/cm ²

ARC Flash clothing

The ARC140B Arc Flash Suit from Oberon is designed to provide protection from Arc Flash heat exposures. The suit exceeds the requirements of NFPA 70E Hazard Risk Category 4 (HRC 4), up to 140 cal/cm². The materials used are manufactured with 57% Para-Aramid, 19% Meta-Aramid, 19% Melamine and 5% Polybenzimidazole (PBI) fiber and a layer of Kevlar.

This standard is the beginning to a new era in high-level Arc protection. The window and suit tested to a V50 of 712 ft/sec with a ballistic threat using a .22" fragment, and 789 ft/sec with a .308" fragment. Only Oberon, in combination with their ArcX polycarbonate window, can now provide this level of protection for a complete suit. A propionate window cannot provide this level of impact protection.

Oberon's ARC140B suit is Inherently Flame Resistant (FR). It will remain Flame Resistant after years of frequent and repeated laundering. ARC140 is the lightest weight Arc Flash suit in the market at this protection level. The outer surface of the shield window is scratch resistant coated to last longer. The inner surface of the shield is Anti-fog coated for clearer visibility.

The 32" Coat protects from Arc flash heat exposure and is constructed of materials that are Inherently Flame Resistant. The Bib-Overalls protect from Arc flash heat exposure and are constructed of materials that are Inherently Flame Resistant.

Components of the ATPV 140 CAL ARC Flash suit

ATPV 140 CAL (Gloves)

ATPV 140 CAL (Bag)

ATPV 140 CAL (Hood)

ATPV 140 CAL (Jacket & Pants)

Specifications :
NFPA 70E
ASTM F1506-02a.
OSHA 1910.269

Garment composition:
30.4 oz/yd² fabric has an Arc Rating of 140 cal/cm² ATPV.

Inherently FR Aramid Blend incorporating Balistic Kevlar

Safety switching equipment (kit) for ATPV 140 CAL Arc flash suits :

8 Piece Substation safety kit :

ARC Flash suits should be accompanied by medium voltage insulated products when switching in on live equipment. This insulated safety equipment protects the user from the presence of voltage whilst arc flash clothing protects the user from arc flash causing excessive heat and arc flash blasts.

Insulated safety products prevent the voltage from passing through the operator. This includes safety equipment to test the presence of live equipment and insulation equipment rated to the correct operating voltage.

That includes insulated rubber gloves and rubber boots, to protect from the presence of low, medium and high voltage.

1)Insulated rescue sticks < 45kv
Specification : EN 62193:2003
IEC 62193 : 2003

2) Insulated rubber mats > 1000v
Specification : IEC 61111:2009

3) High voltage detector 1000V
Specification : IEC61243-1

4) Insulated rubber platforms < 45kv
Specification : NBN761.01 (ENEL)

5) 20Kv Insulated boot
ATPV rated to 40 CAL/cm²
Specification :
Insulation footwear EN 50321
EN ISO 20345 & ASTM F1117

6) Rubber insulated gloves
From 1000v to 36kV
Specification :
EN 60903 : 2003
IEC 60903 : 2002

7) 1.5m Insulated solid stick
Rated 100kv/cm
Specification : ASTM 711 ,
IEC 62193

8) 1.5m Discharge rod (after switching)
De-energising - Rated 100kv/cm
Specification :, ASTM F1826
ASTM D149,

Available from : sales@liveline.co.za

Tel : +2718 468 5080

Filename:	Webpage 2019 rev 6
Directory:	C:\Users\Kevin\Desktop\Arc Flashsuits 2015\2019
Template:	C:\Users\Kevin\AppData\Roaming\Microsoft\Templates\Normal.dotm
Title:	Protective gloves
Subject:	
Author:	dre
Keywords:	
Comments:	
Creation Date:	2018/02/23 3:43:00 PM
Change Number:	3
Last Saved On:	2018/02/23 3:43:00 PM
Last Saved By:	Kevin
Total Editing Time:	0 Minutes
Last Printed On:	2018/02/23 3:43:00 PM

As of Last Complete Printing

Number of Pages:	31
Number of Words:	680 (approx.)
Number of Characters:	3 881 (approx.)